

Christian Noyer: Foreign reserve accumulation – some systemic implications

Speech by Mr Christian Noyer, Governor of the Bank of France, at the Salzburg Global Seminar, Salzburg, 1 October 2007.

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The topic of foreign exchange reserves is a very old one, but it has gained new prominence for two obvious reasons: the level of such reserves has increased dramatically over the last decade; and the management of those reserves is increasingly diversified. Today, I would like to reflect on the implications of these changes for the international monetary and financial system. I will try and examine how they are linked to the persistence of global imbalances, their consequences on global capital allocation and asset prices, as well as their impact on structural change and economic governance in all countries, both emerging and developed.

The level and nature of international reserves

The facts

World foreign exchange reserves have surged from USD 2 trillion in 2001 to an unprecedented USD 5 trillion in early 2007. Of this total, the share of emerging Asia has risen from USD 600 bn to more than 2 trillion, as a result of reserves having increased at a rate of USD 200 to 300 bn per year since 2003. In addition, reserve assets of oil-exporters boomed in 2005 and 2006 by more than USD 200 bn each year.

The drivers

In order to fully understand the nature of this protracted process of foreign asset accumulation, it is important to examine the various factors motivating it.

Insuring against shocks

The drivers of international reserve accumulation in emerging economies were originally related purely to crisis-insurance motives, in the context of widespread pegging to the US dollar. In the wake of the financial crises of the late 1990s, when their official reserves were quickly depleted, emerging economies rapidly rebuilt their foreign assets in order to stave off further speculative attacks, and be able to better absorb the shocks of sudden stops in capital inflows. These countries were understandably eager to protect themselves from the dire macroeconomic consequences of crises like the one they had just experienced. Such self-insurance was also meant to limit future dependence on a bail-out from the international community. Even for countries that were not directly affected by the crisis, these motives probably played a central role, to the extent that some degree of capital account liberalisation may already have been foreseen at the time. Over the years, however, the persistence of large trade and current account surpluses has resulted in an unprecedented accumulation of official reserves.

A deterrent against speculative attacks

One approach that has also been contemplated by the literature is to acknowledge that, to some extent, the probability of a speculative attack may be substantially lowered by the reserve accumulation policy. As a matter of fact, the very limited impact of recent financial turbulence on emerging market currencies may to some extent vindicate the precautionary benefits of reserve assets.

Foreign reserves as a policy tool for growth

In a series of papers, Dooley, Garber and Folkerts-Landau¹ have suggested that what they characterise as a “revived Bretton Woods” arrangement may provide a coherent explanation of trends in current account imbalances and reserve accumulation. They argue that Asian emerging economies are pursuing export-led growth strategies by deliberately maintaining undervalued exchange rates, while providing the funding for the US current account deficit, as the US is a key consumer of these exports. They also conjecture that large foreign reserves may have been accumulated as “collateral” guaranteeing foreign direct investment. This interpretation highlights the dual responsibility of US consumption patterns and emerging Asia’s growth dynamic in the build-up of global current account imbalances.

Are foreign exchange reserves “excessive”?

The benchmarks

Assessing the appropriate level of accumulated reserves requires taking into account the initial motives for holding these reserves, in order to come up with a quantitative norm.

Building on the experience of currency crises, the IMF Guidelines for Foreign Exchange Reserve Management recognise that “official foreign exchange reserves are held in support of a range of objectives”, including to:

- “support and maintain confidence” in monetary and exchange rate policy, including the capacity to conduct foreign exchange interventions;
- “limit external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis or when access to borrowing is curtailed, and in doing so,
- provide a level of confidence to markets that a country can meet its external obligations.”

Not so long ago, the required level of forex reserves was inferred from empirical rules of thumb such as the “three months of imports” rule. After the experience of the 1990s, when financial crises were triggered by a drying-up of capital inflows, the ability of economies relying on international borrowing to service their external debt became a central criterion. The “Greenspan-Guidotti” rule thus recommends that reserves should enable full coverage of total short-term external debt in order to be able to pay back that debt in event of sudden stops, i.e. if and when foreign lenders do not roll-over their loans.

The empirical literature provides evidence that, today, the level of forex reserves in some emerging economies appears excessive with respect to the level inferred from both rules.

Recently, Jeanne and Rancière² provided a “quantitative normative framework” to infer an optimal level for foreign exchange reserves in order to mitigate the impact of sudden stops of capital inflows. Their model, based on welfare criteria, suggests that the build-up of reserves has been excessive in Asian countries since 1997-1998. To be sure, the Asian crisis may have prompted emerging economies to reassess the magnitude of potential sudden stops and the subsequent output loss. Under widespread uncertainty, assessing an optimal level for foreign reserves confronts us with the problem of catastrophic events. In other words, even if the likelihood of a financial crisis may be very small, the potential consequences may be so dramatic that emerging countries could rationally accumulate very large reserves.

¹ Dooley, M., Garber, P., and Folkerts-Landau, D. (2003) – An Essay on the Revived Bretton Woods System, NBER working paper ; (2007) – The Two Crises of international Economics, NBER working paper.

² Jeanne, O. and Rancière, R. (2006) – The Optimal Level of International Reserves For Emerging Market Countries : Formulas and Applications, IMF working paper.

Nonetheless, Jeanne and Rancière's standard approach suggests that the level of reserves is in some countries excessive with respect to the self-insurance motive.

Domestic monetary implications

Excessive accumulation of foreign assets may lead to domestic financial imbalances. These can be caused by incomplete or ineffective sterilisation³. While theoretically feasible through issuance of central bank bills, large-scale sterilisation proves problematic in practice, especially in emerging economies, which are not always fully equipped with market-based policy instruments. In order to effectively control exuberant credit expansion, emerging economies have often had to recourse to large increases in reserve requirement ratios or even non-market policy instruments such as the rationing of credit. In a context in which credit and interest rates are largely administered, the fiscal cost of sterilisation can effectively be transferred to the banking sector, and ultimately to bank customers and stockholders; but that does not remove the opportunity costs of sterilisation for the private sector or the monetary risks of incomplete sterilisation. The bottom line is that in economies where large-scale foreign asset accumulation needs to be sterilised, it is very likely that capital allocation efficiency will be reduced, especially if non-market instruments have to be used.

Foreign reserves and international competition

A second risk is that reserve hoarding may exacerbate trade competition and emphasise regional tensions. Emerging economies compete in their exports towards developed economies, as much as they compete with developed economies. As noted by Aizenman⁴ "in a world with symmetric emerging markets competing in similar industries, competitive [reserve] hoarding tends to dissipate most competitive gains, leading to a "beggar-yourself" [outcome] and excessive hoarding". By contrast "in an asymmetric world, an emerging market with low enough cost of sterilisation may win the hoarding war [...] akin to the "beggar-thy-neighbor" outcome of asymmetric Tariff Wars". The heterogeneity of emerging economies, together with regional trade interdependence may require a more nuanced interpretation. However, that very interdependence raises the stakes of possible trade tensions.

Such tensions at the regional and international level create genuine risks of a protectionist backlash, with potentially very high welfare costs. A protracted accumulation of foreign assets in one form or another will likely be associated with negative externalities; whether domestically or at an international level.

More generally, the emergence of such large holders of foreign assets contributes to shaping a new "world financial order", the stability of which remains to be tested.

Foreign reserves and the allocation of savings

At this point, it is useful to reflect on the savings motives in Asian economies at a more fundamental level, i.e. to explore why people save so much in emerging economies. Besides potentially powerful demographic factors, the precautionary motive is an obvious candidate: it is likely that some emerging economies record high savings rates due to the underdevelopment of their social insurance systems (be it health insurance or pension schemes). Self-insurance against idiosyncratic risks at the household level (as opposed to self-insurance at the central bank level) may cause households to accumulate large quantities of precautionary wealth.

³ Mohanty M. and Turner, P. (2006) - Foreign exchange reserve accumulation in emerging markets: what are the domestic implications?, BIS Quarterly Review.

⁴ Aizenman, J. (2007) – Large Hoarding of International Reserves and the Emerging Global Economic Architecture, NBER working paper.

Moreover, precautionary savings may be compounded in emerging economies that are characterised by greater macroeconomic instability. In addition, when the private sector has limited access to credit, agents have to rely on self-financing, whether for household purchases of durable goods or for corporate sector investment.

What are the underlying mechanisms that cause these private savings to end up in public balance sheets? Such a substitution of public savings for private savings in emerging countries results from the interaction of two basic ingredients: incomplete financial markets and inflexible exchange rate regimes.

Beyond credit constraints, a key feature of financial market incompleteness in emerging economies is the lack of domestic financial assets, such as fixed-income securities. As a consequence, a large share of these savings ends up in bank deposits.

The other key ingredient is of course the exchange rate regime. In many emerging economies, trade surpluses reflect net foreign currency revenues. Capital account regulations sometimes involve surrender requirements of such currency-denominated income but more importantly, in a fixed or a pegged exchange rate regime, the central bank purchases foreign currency to prevent appreciation.

The capital account regime and financial constraints of developing economies result in the central bank “borrowing” from the private sector as a domestic counterpart to the hoarding of international reserves. Banks naturally play a central intermediation role in this mechanism by taking deposits of private savings and purchasing sterilisation bills. That completes the mechanism of excess private savings being diverted into public holding of excess reserves.

Of course, one could argue that central banks are doing their job in taking over foreign exchange positions: naturally, holding foreign assets would expose private agents to currency risk exposure, and in that respect the public holding of foreign assets may be seen as relieving domestic agents from that risk. However, this reasoning raises two objections:

- as taxpayers, domestic private agents are still indirectly exposed to the realisation of the large currency risk that public managers of foreign assets bear, which entails fiscal costs;
- if the capital account regime had not resulted in the public sector management of these savings in the form of foreign assets, in principle, corporates (and possibly households) would have directly invested their savings in financial instruments of their choice abroad. More realistically, they would probably have unwound their currency exposures and saved in domestic assets. In the absence of official intervention, the exchange rate would have adjusted.

However, the fact remains that foreign reserve holdings belong to the nation that has accumulated these assets, hence indirectly to private domestic agents (admittedly including future generations). The public intermediation of these savings naturally leads us to the question of the appropriate manner in which to manage such large holdings.

The management of international reserves

The facts

High current account surpluses mechanically reflect an excess of domestic (private or public) savings, which must be invested abroad. But in East Asia and commodity-exporting countries, these accumulated excess savings appear to be largely held by sovereigns. In addition to foreign exchange reserves, a growing part of these foreign assets is now invested through sovereign wealth funds (SWFs).

For the time being, the assets managed by SWFs (around USD 2.5 trillion) are relatively small compared with the global capitalisation of bond and equity markets – about USD 100

trillion – or even compared with the holdings of the private asset management industry (pension, insurance and mutual funds), estimated at around USD 55 trillion. However, according to some estimates, SWF assets could more than treble over the next 5 years and reach around USD 8.5 trillion in 2012.

All SWFs share a common purpose which is the transfer of wealth across time. The objectives of central banks are different, namely to foster price stability and financial stability. Besides, central banks may be more sensitive to headline risk, and exposure to large losses could damage their credibility. Creating an entity separate from the central bank, an SWF, in order to manage risky assets has often been seen as a good governance structure. Such a structure is also expected to set up a Chinese wall between central banks and SWFs, eliminating the risk of trading based on insider policy information. The effectiveness of such segregation may yet be challenged, but more importantly, it may not completely prevent conflicts of interest.

A distinction probably has to be made between commodity and non-commodity SWFs. In oil-producing economies, foreign asset accumulation stems from oil royalties reflected in large government budget surpluses, so that their management by public entities is a natural outcome. The funding of commodity SWFs stems from a domestic resource that is most of the time owned, exploited or taxed by the government: in this respect it is genuine sovereign wealth, and the result of public savings. By contrast, foreign reserves and SWF accumulation that is not commodity related might be seen as primarily a diversion of excess private savings.

Commodity funds

The set-up of stabilisation funds by oil-exporting countries was first motivated by the desire to smooth oil revenues, which are highly volatile, with a view to maximizing the overall rent from oil extraction. To the extent that commodities are non-renewable resources, standard economic theory suggests that part of extraction revenues should be saved in order to smooth the nation's inter-temporal consumption, very much like an individual saves over the lifecycle for his retirement, but also possibly in order to leave a bequest to his offspring. Commodity SWFs were indeed equally motivated by an attempt to optimise the inter-temporal benefits of natural resources beyond the exhaustion horizon, as well as on the grounds of fairness to future generations. As such, oil funds are far from being a new phenomenon: the earliest funds were thus created in the aftermath of the first two oil shocks. The more recent surge in oil prices has naturally spurred the set-up of new funds in countries where new extraction capacities have emerged as profitable.

Non-commodity funds

Non-commodity SWFs are mainly born out of foreign exchange interventions, and can be regarded as “spillovers” from international reserves that can no longer be properly managed within the standard framework of official reserve assets. One of the questions to be discussed is whether they correspond to the same rationale as commodity funds, and to what extent they can be considered to have the same sound basis.

Comments

FX reserves are typically invested in safe and liquid assets such as T-bills, T-bonds or short-term collateralised deposits. The emphasis on liquidity risk control in the prudent management of reserves logically results from their possible use in foreign exchange interventions.

But SWFs are clearly designed to invest in less-liquid and riskier assets that provide higher returns than the typical assets held in official reserves. Whereas the objective of reasonable returns was typically mentioned last, as “subject to liquidity and other risk constraints”, in the IMF Guidelines on reserve management, excess returns clearly feature as a primary

objective of SWFs. A central reason for this reordering of objectives is of course the much longer-term horizon of these funds, which entails greater tolerance of short-term fluctuations in returns. Indeed, the development of SWFs can in some cases be related to the increasing reliance on fully-funded government pension schemes, which often share a similar approach to asset allocation.

For instance, Norway's *Government Pension Fund – Global*, the continuation of its Petroleum Fund, is managed with respect to a strategic benchmark that holds 40% of its assets in equities, 50% of which are outside Europe.

In the case of several East Asian economies, the transfers from official reserves to SWFs therefore entail a loss of the liquidity services from holding reserve assets. But to the extent that expected returns are higher, one benefit of investing in riskier assets is a reduction in the fiscal cost of sterilisation.

The strategic asset allocation of SWFs could in principle be designed in relation to the specific risk exposures of the country. Emerging market economies are characterised by a range of vulnerabilities to global macroeconomic shocks such as sharp changes in oil, metals or agricultural commodities prices, as well as the business cycles fluctuations of developed economies. For instance, it seems intuitive that the optimal asset allocation of oil-producing countries should be diversified into assets uncorrelated with oil prices. By contrast, most Asian countries are commodity importers and could hedge their risks with long positions on commodities futures and other assets that are highly correlated with commodities prices. SWFs can thus potentially provide macro-hedging services to their countries. The task might however be easier for commodity exporters: their macroeconomic risks are clear, highly concentrated and hedging products are readily available on financial markets.

Issues

Impact on asset prices

Under what conditions can sovereign asset management go hand in hand with orderly functioning of the financial markets?

Large foreign reserve holdings are already seen to have an impact on asset prices. The strong preference for safety and liquidity in official reserves, combined with the fast increase in reserve assets, has often been given as an explanation for what Alan Greenspan first called a conundrum, namely the persistently low level of long-term interest rates. For instance, Warnock and Warnock⁵ estimated that, under the hypothesis of “no foreign official flows into U.S. government bonds in 2005”, the 10-year Treasury yield would have been 90 basis points higher. Several alternative estimates exist and there are significant differences between them. But they consistently conclude at least some impact on long-term interest rates.

As SWFs hold portfolios with higher risk/return profiles than the usual FX reserve management funds, many market economists predict that their development will result in additional demand for high-risk asset classes like equities and lower demand for low-risk assets classes like short-term government securities. This could in theory lead to an increase in bond yields (partly reversing the prior impact of official reserve accumulation) as well as a decrease in the equity risk premium. Estimates of these effects must however be interpreted with caution: they rely on fragile assumptions, amounting to an equivalency between the development of risky sovereign holdings and a lasting decline in global risk aversion. Before jumping to such a conclusion, one should keep in mind that if private savings had not been

⁵ Warnock, F. and Warnock, V. (2006) - International Capital Flows and U.S. Interest Rates, NBER working paper.

intermediated in public balance sheets, they might as well have been invested directly in risky assets.

Yet the impact of SWF investments on some small and illiquid financial markets, such as gold, commodities and real estate might be high. To the extent that SWFs attempt to hedge macroeconomic risks for their country, difficulties could arise insofar as the best existing hedging instruments may be less liquid than bonds and equities. The risk of a potentially disruptive impact on asset price dynamics should then be acknowledged for large SWFs, as underlined by the *2007 IMF Global Financial Stability Report*.

Investment criteria

By their very nature, the criteria used for sovereign portfolio strategic asset allocation are not exclusively related to value-enhancing considerations, but may also encompass other policy objectives. Among the main non-financial criteria, ethical and environmental concerns are sometimes put forward. The Norwegian Government Pension Fund, for instance, established in 2004 its “ethical guidelines”, excluding investments in weapons production industries or polluting sectors. Strategic or industrial goals can also be pursued, such as facilitating the access of domestic firms to new foreign technologies, or more generally bolstering national industries. One such example is provided by the new Chinese State Investment Company, which could possibly use a large fraction of its assets to recapitalise the Chinese banking sector.

In a word, sovereigns are also in charge of economic policy and it is intrinsically difficult for them to maintain schizophrenia between their actions as policy-makers and their decisions as managers of public assets. The strategic allocation of their risky assets can therefore be expected to be used, in some cases, as another policy instrument. Given these specificities of sovereign holdings of risky assets, it is legitimate to wonder whether the growth of these holdings raises new challenges for central banks and the international community.

Transparency

I will conclude on the issue of the appropriate transparency level for SWFs. Should SWFs be more transparent than other institutional investors? This question must be addressed from two different perspectives: accountability and financial stability.

As a public institution, an SWF should disclose a minimum set of information because of its fiduciary responsibility. Over the recent past, public institutions have responded more and more favourably to the arguments in favour of transparency. In particular, the benefits of greater accountability and the benchmarking of sovereign institutions tend to outweigh arguments in favour of secrecy. For instance, most central banks nowadays report their FX reserves holdings to the IMF under the SDDS and publish a detailed annual report. The Central Bank Gold Agreement also provides a striking example of where central bank transparency *ex ante* and *ex post* has had significant benefits in preventing market disturbances, in the patrimonial interest of its participants.

A similar level of transparency could therefore be extended to SWFs, for their own benefit.

Some of them have already adopted such good practices: the Norwegian Government Pension Fund is widely recognised as a model in that respect: it provides detailed information about its asset allocation, its quarterly results and its investment policy on its website. More generally, public pension funds typically set a useful example. For instance, the French *Fonds de Réserve pour les Retraites* also endeavours to ensure transparency and accountability.

From the perspective of financial market stability, a lack of information regarding SWF holdings and strategies can contribute to herd behaviours, with a potentially very negative impact on financial markets dynamics. With that overriding concern in mind, a code of conduct would be welcome, which could be designed within international fora (for instance

under the aegis of the World Bank or the IMF), in order to establish minimum requirements regarding adequate information disclosure. Further progress in that field would greatly alleviate concerns over risks of capital misallocation as well as possible negative macroeconomic and financial market externalities of large foreign asset management.